Cleaning up bacteria in the Skokomish Watershed

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An update for valley residents

March 2005

In 1999, an effort began to clean up bacteria in the Skokomish watershed. The Department of Ecology conducted a water quality study with help from the Skokomish Tribe. Then local jurisdictions, some valley residents, and state agencies developed a cleanup plan. Some members of the group that developed the cleanup plan continue to work together to put the plan into action, and we produced this newsletter.

Progress on cleanup work

We finished the cleanup plan two years ago. Since then:

- Landowners are working with Mason Conservation District in various ways to keep manure out of the water - fencing animals, applying manure to fields at rates and times that prevent runoff, planting vegetation along stream banks to filter runoff, and implementing other practices like gutters and downspouts, manure storage, and improved pasture management.
- Mason County and the Department of Fish and Wildlife have taken measures to address potential pollution from on-site septic systems. The Skokomish Tribe continues working towards a waste water treatment plant. The County is evaluating options to help address Hood Canal issues.
- Various partners have helped reduce sanitation problems related to recreational use in certain areas of the valley. New signs have been installed to direct campers to federal forest lands, camping and partying at the Dips have been reduced, and educational material has been placed on sport fishers' windshields.

Water quality status

For a while, water quality samples showed reduced bacteria levels above the Highway 101 bridge and it appeared that cleanup goals may have been achieved in that area. But last spring bacteria concentrations went back up. Although the biggest problem still appears to be downstream from the Highway 101 bridge, since April all four of the main sampling points have shown bacteria levels above cleanup goals. Those points are on Weaver Creek, Purdy Creek, Ten Acre Creek, and at the Highway 106 bridge.

The water quality study set cleanup target levels of bacteria concentrations needed to protect commercial shellfish harvesting in Annas Bay ("target concentrations"). Concentrations must meet two different targets for a sampling location to be considered "in compliance." The first target is the geometric mean value (GMV) – which is a sort of average of sample values over time. The second target is the 90th percentile – meaning 90 percent of the samples are below that concentration. The 90th percentile shows the number and magnitude of high concentrations, and is typically the harder standard to meet.

The graphs on the next page show rough calculations of the target established by the TMDL study, the concentrations (GMV or 90th percentile) found during the study, and concentrations measured since April of 2004.
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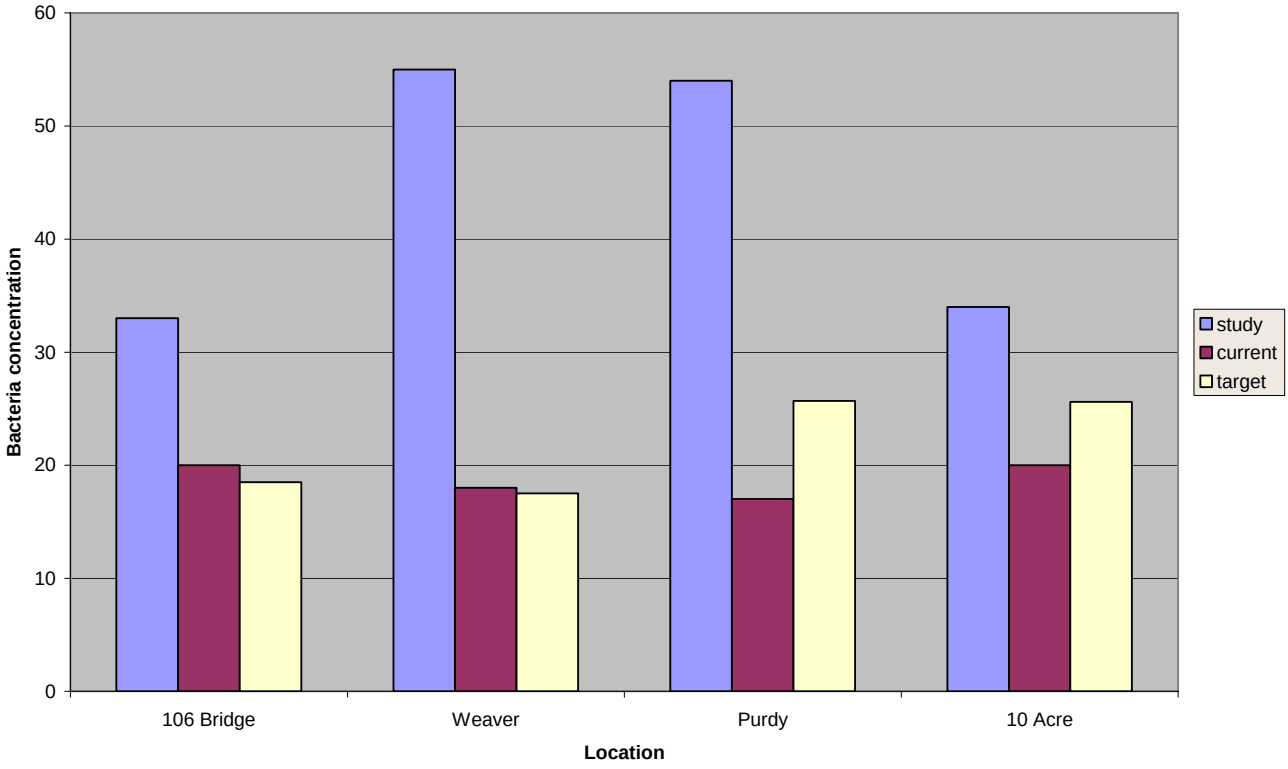
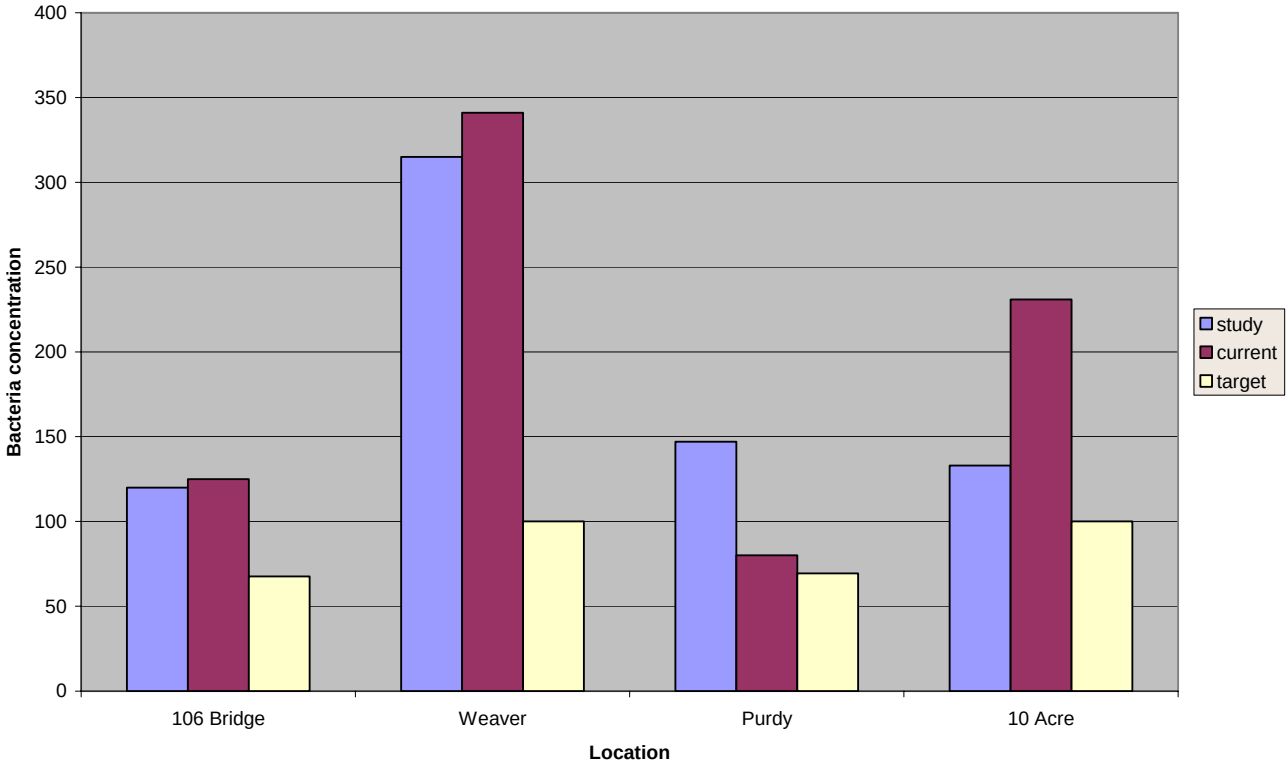
Progress - GMV



Progress - 90th Percentile



Why are bacteria a problem?

Public health is the first concern. Bacteria concentrations in water mean that people exposed to the water or eating shellfish from the water have an increased chance of getting sick.

There is also an economic concern. When bacteria concentrations reach a certain level, commercial harvest is restricted. The state Department of Health is currently drafting its annual reports. Preliminary analysis indicates that water quality conditions in the area are continuing to worsen.

On the Skokomish, there's another very important concern. You've read about the dissolved oxygen problems in Hood Canal. When organic material, such as manure, decomposes in water, it uses oxygen from the water. In addition, the nitrogen in the manure acts like a fertilizer in the water, just like it does on land. It encourages growth of plants and algae, which use oxygen from the water as they die and decompose. Minimizing sources of oxygen demand is important to the recovery of Hood Canal.

So what happens now?

Mason Conservation District, consulting with the Department of Ecology, began a water quality study in January to evaluate bacteria concentrations now compared to goals set in the 1999-2000 water quality study. They will be sampling every other week at the four main points through November of 2006. The data will be posted to Ecology's website (address below).

The Skokomish Tribe continues monthly monitoring throughout the watershed. In addition, Mason County is hopeful of receiving a grant through Ecology that will fund monitoring in a number of other locations in the valley, to help identify bacteria source areas. We will be evaluating water quality data to measure progress since the TMDL study, and to understand the recent increase in bacteria.

Want to know more?

Information on the TMDL study and cleanup plan, as well as current water quality monitoring information, is on Ecology's website at
http://www.ecy.wa.gov/programs/wq/tmdl/watershed/skokomish/index.html

Or you can contact:

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Thanks for your interest in water quality in the Skokomish Watershed!